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Knowledge and Attitudes with Family Role in Prevention of Pulmonary Tuberculosis in Maros, Indonesia

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Abstract. Pulmonary tuberculosis is a contagious disease that is still a major health problem, both globally and in Indonesia and is the leading cause of death worldwide in people living with HIV/AIDS. In Maros Regency, South Sulawesi Indonesia, the incidence of pulmonary tuberculosis each year continues to increase and can result in death. This study aims to determine the relation of knowledge and attitudes with family role in prevention of pulmonary tuberculosis in Turikale Subdistrict, Maros Regency. This research is a cross sectional study and the sample total of 95 families selected by purposive sampling. The result showed that family knowledge (X^2 count = 3.865) and family attitudes (X^2 count = 5.251) had a value of X^2 count > X^2 table (3.841). This study showed a significant relation between knowledge and attitudes with family role in prevention of pulmonary tuberculosis. Suggestions for families and communities expected to constantly improve their knowledge in prevention of pulmonary tuberculosis by participating in health education activities.

1. Introduction

Tuberculosis remains a major public health issue in many developing nations and is the leading cause of death worldwide in people living with HIV/AIDS. The current global estimate is that over 8.8 million tuberculosis cases emerge each year, and nearly 1.5 million people die from TB yearly: 98% of these cases and deaths occur in developing countries [1,10]. Tuberculosis is considered as a social disease, with many socio-cultural factors contributing to the disease burden [2].

Pulmonary tuberculosis is an infectious disease caused by *Mycobacterium tuberculosis* and most often manifests in the lungs. Mycobacterial is transmitted through droplets in the air so that a patient with pulmonary tuberculosis is the cause of pulmonary tuberculosis transmission in the population in the vicinity. Clinical symptoms may include coughing continuously and phlegm for 3 weeks or more, sputum mixed with blood (hemoptysis), shortness of breath and pain in the chest, weak body, loss of appetite and weight loss, discomfort (malaise), night sweats without activities and fever chills more than one month [3,18].

Transmission of pulmonary tuberculosis and the development of the majority driven by social factors such as adverse environmental conditions including occupant density and ventilation state homes that do not meet health requirements Transmission of pulmonary tuberculosis and the development of the majority driven by social factors such as adverse environmental conditions including occupant density and ventilation state homes that do not meet health requirements [4].

Early diagnosis and appropriate treatment for the vast majority of people who depeloped pulmonary tuberculosis is the epidemiological basis of global tuberculosis control efforts [5, 24]. According to the International Standards for tuberculosis care, all person with otherwise unexplained productive cough lasting 2-3 weeks or more should be evaluated for tuberculosis [6, 25].

The global target for reducing the Tuberculosis (TB) incidence, prevalence, and mortality for 2015 has been outline by the Stop TB Partnership. These targets are set within the overall context of the millennium Development Goals (MDGs) and are that the global tuberculosis incidence rate should be falling by 2015 and that tuberculosis prevalence and death rates should be halved by 2015 compared with their level in 1990 [7, 8].

In South-East Asia Region, WHO data show that pulmonary tuberculosis kills about 2000 people each day and about 40% of cases of pulmonary tuberculosis in the world located in Southeast Asia. Two of the three countries with the largest number of patients with pulmonary tuberculosis in the world, namely India and Indonesia are in this region compared to other infectious diseases. Indonesia is under India, with the number of people in the world, followed by China. Compared with other infectious diseases, pulmonary tuberculosis become the number one killer in the region, where they amount to 2-3 times the number of deaths caused by HIV/AIDS, which is ranked second [9].

From the results of routine surveillance of communicable diseases based on health center in South Sulawesi Province in 2009, it is explained that out of 10 trends in South Sulawesi, Pulmonary tuberculosis is ranked fifth after cholera, diarrhea, dengue fever, typhoid. In 2009 found as many as 8089 cases new pulmonary tuberculosis patients and in 2010 found as many as 8,463 new pulmonary tuberculosis patients which spread evenly in all regency in South Sulawesi [11].

Based on data in Turikale Subdistrict, Maros Regency in 2016 is the largest number of pulmonary tuberculosis patients among 14 community health centers in Maros Regency that is 97 new cases of pulmonary tuberculosis. Pulmonary tuberculosis is not only an individual issue but it is a community problem, which is related to the economic problems of individuals, families, communities, companies and countries [12].

The government's efforts to combat pulmonary tuberculosis today are the adoption of the Directly Observed Treatment Short Course (DOTS) strategy, in the form of short-term, directly supervised treatment. Although the government has done the control of pulmonary tuberculosis but there are still many lungs pulmonary tuberculosis patients are found. This is triggered by inadequate knowledge and attitudes among the community [13, 14].

Knowledge is very important in providing insight into the attitudes and actions of a person. Knowledge is the result of knowing and this happens after a person performs sensing of a particular object. According to the way of occurrence, knowledge there are 2 namely: a priori knowledge that occurs without experience but obtained through analytic thinking (general-specific) and aposteriori knowledge that occurs because of experience, where the way of thinking synthetically (specifically-general). Knowledge is a very important factor for the formation of a person's actions (over behavior). Family knowledge about the prevention of pulmonary tuberculosis is a very important factor for the formation of action to prevent and cope with pulmonary tuberculosis disease because if someone does not know about an object, then the object would not interest him [14, 23].

Head of the families have an important role in the prevention of disease among family members, particularly with respect to their education and knowledge of disease [26]. Family knowledge and attitudes about the dangers of pulmonary tuberculosis have a role to prevent disease. Sufficient knowledge and attitudes will enable a person to make prevention and protection against a disease.

This study aims to determine the relation of knowledge and attitudes with family role in prevention of pulmonary tuberculosis in Turikale Subdistrict, Maros Regency. To know factors affecting knowledge and family attitudes regarding prevention of pulmonary tuberculosis conducted in the working area in Turikale Subdistrict, Maros Regency.Analysis focuses on residents' knowledge of the symptoms and causes of the disease, residents' attitudes toward of pulmonary tuberculosis, and the local practices most likely to be implemented in this prevention and control strategies of pulmonary tuberculosis.

2. Method

This study was conducted in Turikale Subdistrict, Maros Regency on the basis that in 2016 was the highest number of pulmonary tuberculosis patients among 14 health centers in Maros Regency by 97 new cases with sputum smear positive. This study used a survey cross sectional study design [20, 22]. The population in this study were families living in Turikale Subdistrict, Maros Regency in 2016 as many as 513 Family. The sample is part of the population that are the focus of this research. The sampling technique was purposive sampling as much as 95 families [15] with criteria: The family is willing to fill out a questionnaire; Occupy the house with the head of the family; There is a family member who had suffered from pulmonary tuberculosis or who have never suffered from pulmonary tuberculosis; and Families living in Turikale Subdistrict, Maros Regency.

The primary data obtained by direct interviews with family using a questionnaire (knowledge and attitude in family prevention of pulmonary tuberculosis). Data collection was carried in 2 months (25th March to 25th May 2017).

Data analysis was performed using the Statistical Package for Social Sciences (SPSS) computerized program that is presented in the form of a frequency distribution table. The study analyses included descriptive about gender, age, level of education, and occupation. The univariate analysis used distribution tables and frequency to obtain information related to the incidence of pulmonary tuberculosis. The bivariate analysis (Chi-Square test with significance level of $\rho<0.05$) was conducted to see the relation between knowledge and attitudes in prevention of pulmonary tuberculosis.

3. Results and Discussion

Descriptive characteristic and univariate of the analyzed sample are shown in table 1 showed gender highest in male as much as 58.9% respondents and the lowest female as much as 41.1% respondents. The age group of the highest 35-39 years by 58 (61.1%) respondents and the lowest in the age group ≥ 45 years by 1 (0.1 %) respondent. The highest education level is high school as much as 46 (48.4%) respondents and the lowest is a tertiary educated 23 (24.2%) respondent. The type of occupation the respondent majority of farmer as much as 75 (75.8%) respondents and the lowest is an employed as much as 2 (2.1%) respondents. Most of the respondents (56 respondents or 58.9%) have good knowledge whereas 39 respondents (41.0%) have poor knowledge. Regarding attitudes, 58 out of 95 respondents (61.0%) have good attitudes, whereas 37 respondents (38.9%) have poor attitudes.

Table 1. Demographic Characteristics of The Analyzed Sample (*n*=95)

Variable	Frequency	Percentage (%)
Gender Distribution		
Male	56	58.9
Female	39	41.1
Age Distribution		
30-34	31	32.6
35-39	58	61.1
40-44	5	5.2
≥ 45	1	0.1
Education Level		
Primary School	46	48.4
High School	26	27.3
Tertiary School	23	24.2
Occupation		
Civil Servant	9	9.5
Entrepreneur	12	12.6
Farmer	75	75.8
Unemployed	2	2.1

Knowledge		
Good	56	58.9
Poor	39	41.0
Attitude		
Good	58	61.0
Poor	37	38.9

Source: Primary Data 2017

Relation of knowledge with family role in prevention of pulmonary tuberculosis**.** Knowledge with family role was categorized into two groups (good and poor). Participants scored (59.6%) on knowledge were classified as good of knowledge and poor family role (57.9%). Chi square test was used to determine the relation between knowledge with family role in prevention of pulmonary tuberculosis in Turikale subdistrict, Maros Regency were (X^2 count = 3.865, > X^2 table = 3.841). There was significantly relation between knowledge with family role in prevention of pulmonary tuberculosis in this study. For more details can seen in table 2 below:

Table 2. Knowledge with Family Role in Prevention of Pulmonary Tuberculosis nn Maros, Indonesia

Knowledge	**Family Role**				**X^2 Count**	**X^2 Standard**
	Good		**Poor**			
	n	**%**	**n**	**%**		
Good	34	59.6	22	57.9		
Poor	23	40.4	16	42.1	**3.865**	**3.841**

Source: Primary Data 2017

Relation of attitudes with family role in prevention of pulmonary tuberculosis**.** The table 3 shows respondents good attitude of pulmonary tuberculosis and family role (87.7%) compared with good of attitude and poor family role (21.1%). Chi square test was used to determine the relation of attitude and family role in prevention of pulmonary tuberculosis in Turikale subdistrict in the regency of Maros were (X^2 count = 5.251, > X^2 table = 3.841). This study found significant relation of attitudes with family role in prevention of pulmonary tuberculosis. For more details can seen in table below:

Table 3. Atitude with Family Role in Prevention of Pulmonary Tuberculosis in Maros, Indonesia

Attitude	**Family Role**				**X^2 Count**	**X^2 Standard**
	Good		**Poor**			
	n	**%**	**n**	**%**		
Good	50	87.7	8	21.1		
Poor	7	12.3	30	78.9	**5.251**	**3.481**
Total	**57**	**100**	**38**	**100**		

Source: Primary Data 2017

The level of knowledge of the family is a very important factor in preventing pulmonary tuberculosis. The result showed knowledge of family has a good role in the prevention of pulmonary tuberculosis (table 1). In prevent morbidity and mortality from pulmonary tuberculosis one of which is to equip families with knowledge about the dangers, symptoms, prevention and how to treat pulmonary tuberculosis.

Distribution of respondents by the family knowledge indicates that the family enough knowledge about pulmonary tuberculosis with a good family role in the prevention of pulmonary tuberculosis as many as 34 respondents (59.6%). This is supported by Notoatmodjo (2010), which revealed that knowledge can change behavior in the desired direction [23].

Based on the result of chi square test, the value of X^2 count (3.865)> X^2 standard (3,84) so that Ho is rejected and Ha accepted by interpretation there is relation of knowledge with family role in prevention of pulmonary tuberculosis in Turikale Subdistrict, Maros Regency in 2017. Munirah (2010) suggests that there is a significant relation between knowledge with the role of head of

household in controlling pulmonary tuberculosis, which is obtained ρ (0.007) with α (0.05) so that (ρ < 0.05) [17].

Distribution of respondents by family attitudes shows that the attitude of sufficient family with good family role in the prevention of pulmonary tuberculosis of 50 respondents (87.7%). This is in line with Mar'at (1985) which says that attitude is a disposition or mental state within the soul or self of an individual or family to react to the environment or the public, both the natural environment and the physical environment, the attitude is evaluative responses which can be either a positive response or negative [16, 28].

Based on the results of chi square test against 95 respondents, obtained X^2 count (5.251) >X^2 standard (3.841) which means that the family attitudes on prevention of pulmonary tuberculosis in Turkale Subdistrict, Maros Regency 2017. According to research Kusuma (2011) argued that there are statistically significant the attitudes of the family is a family of consciousness that determines real deeds in the activities, efforts, actions or activities that families can support the prevention and tackling pulmonary tuberculosis disease [29]. Family attitudes such as positive attitudes towards preventive measures that give Bacillus Calmette Guerine (BCG) immunization for babies, family a health check if there are family members who have a cough with phlegm for more than three weeks, cleaning the environment around the house and so on. A negative action towards an individual based on his/her health or social status is considered as discriminating attitude [13, 19].

Correlation between a good attitude with role of head of the family in control of tuberculosis cases to eight times greater than in less attitude. Talked about relationship was statistically significant (OR = 8:08; 95% CI = 1.60 to 40.71; p = 0.011). It was also found that good knowledge does not necessarily lead to good practice [14, 27].

4. Conclusion

From the results of data processing research conducted on 95 respondents in Turikale Subdistrict, Maros Regency obtained the conclusion that there is showed a significant relation of knowledge and attitudes with family role in the prevention of pulmonary tuberculosis. Early detection and treatment are crucial determinants of successful pulmonary tuberculosis control Suggestions for families and communities expected to constantly improve their knowledge in prevention of pulmonary tuberculosis by participating in health education activities.

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